

# *Permit by Rule for Treatment of Aqueous Wastes Containing Cyanides*

Department of Toxic Substances Control  
November 2007

# Agenda

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- Background
- How the proposed rulemaking fits into existing regulations
- Proposed cyanide regulations
- Next steps
- Contact information



# Regulatory Background

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- Cyanide was originally proposed as one of the PBR eligible waste stream and treatment processes.
- Consent Orders
- Many revisions made in response to issues
  - Possible hazardous associated with cyanide (may be extremely hazardous or reactive)
  - Cyanide does not fit the intent of PBR

# PBR Concept

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- Known and proven technology used to treat low risk hazardous waste generated onsite.
  - Intended to cover the broadest category of waste streams
  - Not intended for specific patented technologies
- Innovative technology can be certified (HSC 25200.1.5) and become eligible for PBR.

# Existing PBR Requirements

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- Submittal of PBR notification and forms
- Submittal of fee form
- Effluent discharge requirements
- Maintain compliance and documentation for:

Waste analysis plan

Inspection schedules

Training documents

Contingency plan

Closure plan

Container standards

Tank standards

Secondary containment

Corrective action

Financial Assurance

POTW permit

Air permit

# How does this rulemaking fit into existing regulations?

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## Title 22 California Code of Regulations

Chapter 10 Definitions

Chapter 11 Waste Determination

Chapter 12 Generator Requirements

Chapter 13 Transportation Requirements

Chapter 15 Interim Status TSD Requirements (PBR facilities)



Chapter 45. Requirements for Units and Facilities Deemed to Have a Permit by Rule

**§67450.11. List of Influent Waste Streams and Treatment Process(es) for Influent Waste Streams Eligible for Treatment Pursuant to Permit by Rule.**

**§67450.11(d)**

# Definitions § 66260.10\*

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- Wastewater
- Permit by Rule
- Onsite
- Container
- Tank
- Ancillary equipment
- Publicly owned treatment works or POTW
- Reactive § 66261.23(a)(5)
- Extremely hazardous waste § 66261.110
- Aqueous waste § 67450.11(b)

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Unless specified

# §67450.11(d) Cyanide Regulations

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- (1) Applicability
- (2) Eligible waste streams
- (3) Eligible treatment processes
- (4) Best Management Practices
- (5) Non-aqueous not allowed under PBR
- (6) Electrowinning of process solutions
- (7) Dilution (bleeding) of process solutions

# Applicability/Eligibility

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- Treatment is not regulated under the federal Resource Conservation and Recovery Act (RCRA);
- Waste is a hazardous waste because it contains a cyanide with or without metals;
- Treatment is conducted with processes listed;
- Operator is in compliance with the BMP requirements;
- Treatment is conducted in tanks or containers; and
- Discharges to air comply with applicable air pollution control and worker safety regulations.

# Cyanide-Containing Wastes Eligible for Treatment

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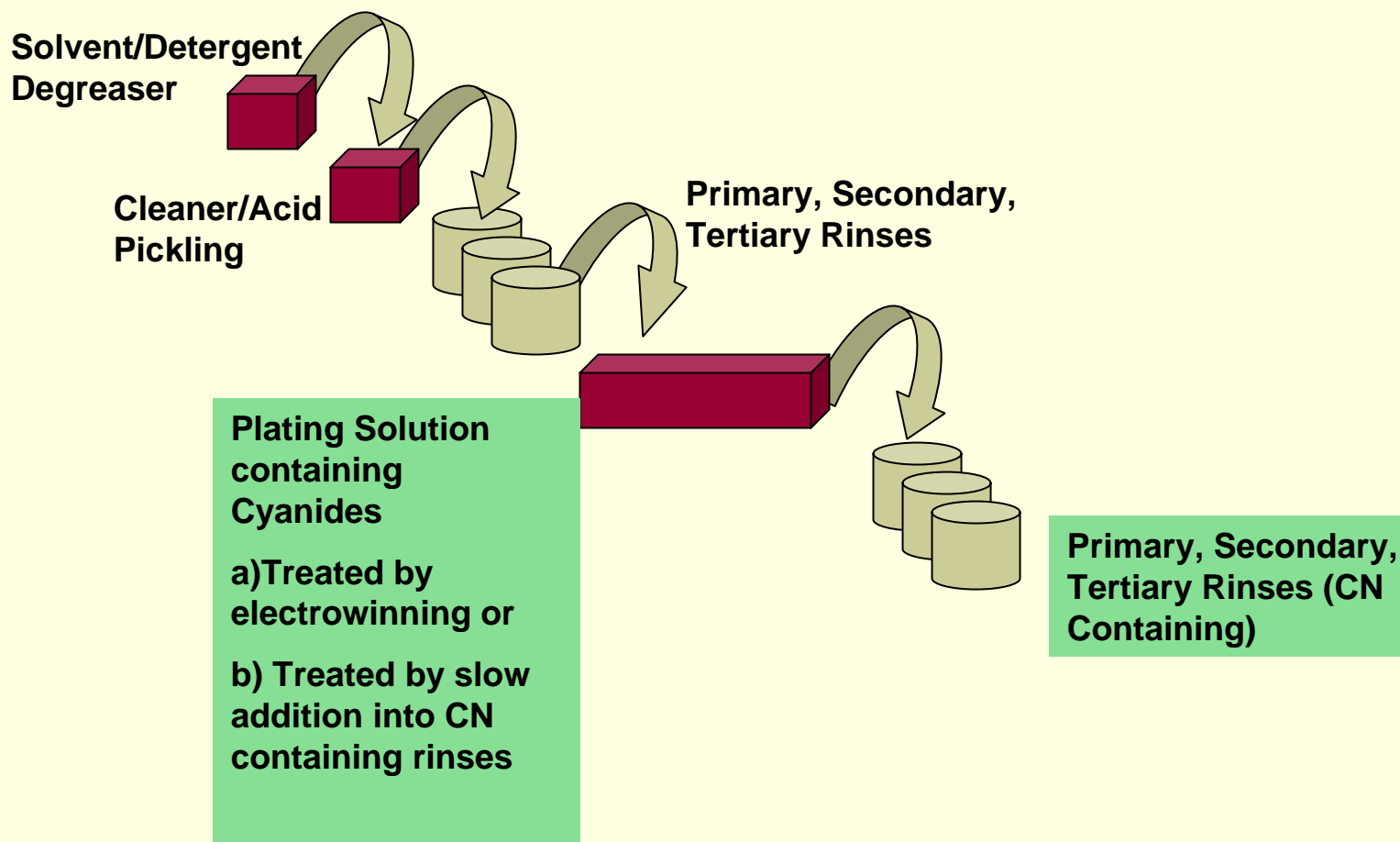
- Aqueous wastes generated by rinsing workpieces and fixtures;
- Aqueous wastes generated by ion exchange columns at facilities with zero discharge;
- Aqueous wastes generated by rinsing equipment used to transfer cyanide solutions onsite;

# Cyanide-Containing Wastes Eligible for Treatment

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- Spent process solutions if managed by electrowinning; and
- Spent process solutions after being diluted in accordance with the requirements in subsection (d)(7)

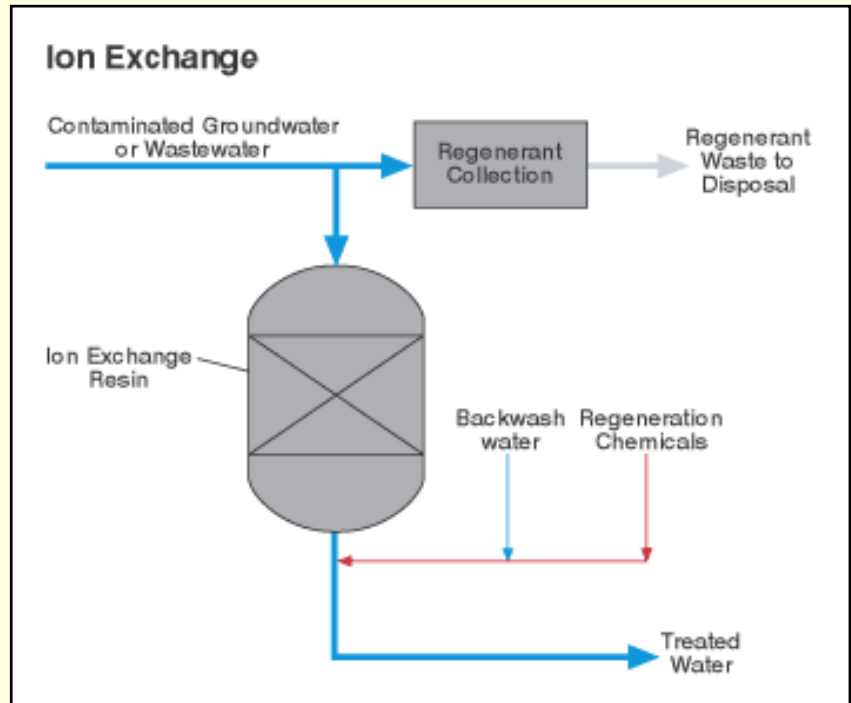
# Eligible Hazardous Waste from Typical Plating line



# Additional Eligible Waste



Rinsing of  
Equipment (e.g.,  
Containers)



CN containing  
regenerate from  
Ion Exchange  
Column

# Processes Eligible To Treat Cyanide-Containing Wastes

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- Oxidation by addition of hypochlorite;
- Oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light;
- Alkaline chlorination;
- Electrochemical oxidation; or
- Ion exchange.

# Best Management Practices

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- The owners or operators of all sites or facilities subject to this subsection shall implement the following to reduce waste generation, and minimize or eliminate releases to work areas and the environment
  - Spill and Release Prevention
  - Pollution Prevention

# BMP Spill and Release Prevention

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- Use holding racks and drain boards between all process and rinse tanks to contain plating drag-out, rinse solution drag-out, and return drag-out solutions to process tanks

# BMP Pollution Prevention.

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- Use countercurrent rinsing to reduce water use and wastewater generation;
- Every 4 years, review the use of cyanide containing process baths to determine if a non-cyanide alternative with equivalent results is available
- Provide initial and annual training to employees on how to reduce wastes in the production area

# Does Not Allow The Treatment Of Non-Aqueous Wastes

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- Non-aqueous cyanide containing wastes may not be treated under this authority
  - Aqueous is defined as 1% of suspended solids, as measured by Method 209C in “Standard Methods for Examination of Water & Wastewater”
- Solids are not allowed to be treated under this proposed regulation

# Electrowinning of Process Solutions

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- Spent process solutions containing recoverable amounts of metal may be treated by electrowinning in order to recover metals
  - Incidental treatment of cyanide contained in the spent process solution by the electrowinning process is also authorized
  - Electrowinning means the electro-deposition of metals from spent process solution.

# Dilution of Process Solutions

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- Spent cyanide-containing process solutions may be treated by slow addition to the rinseates for the purpose of reducing cyanide processing hazards provided:
  - Solutions resulting from the authorized mixing are further treated by processes listed
  - Owner/Operator managing this cyanide-containing spent process solutions comply with additional requirement.

# Additional Requirements for the Dilution of Process Solutions

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- The concentration of cyanide in the receiving solutions does not exceed 5000 parts per million (ppm);
- The residual solids removed by the treatment process are recycled by a facility that recovers metals; and
- Records are maintained at the facility for 3 years and are made available to authorized representatives of the Department, the CUPA, or the U.S. EPA upon request:

# Issues Identified During Rulemaking

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- Waste characterization
  - setting a lower threshold limit
- Differentiating cyanide-bearing wastes from other waste streams authorized under PBR
- Expanding the eligible waste streams
  - anode bags, filters, product drums
- Expanding eligible treatment processes
- Greater flexibility in the application of BMPs
- Recycling exemptions

# Next Steps

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- Preparing the draft Response to Comments to the 45 day Public Notice
- Preparing the CEQA documentation
- Regulations will be re-noticed for 15 days or 45 days based on the revisions
- CEQA documentation will be Public Noticed for 30 days
- Will prepare Final Response to Comments
- Submittal to Office of Administrative Law

# Schedule for 15 day Renotice

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Finalize the Response to Comments	Nov 2007
California Environmental Quality Act (CEQA) Draft Negative Declaration	Nov 2007
Re-notice the Rulemaking 15 days	Dec 2007
Response to Comments for both rulemaking & CEQA document	Jan 2007
Submit to Office of Administrative Law for Approval (30 working days)	Jan 2008
Submit to the Secretary of State	Mar 2008
Effective Date	Apr 2008

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Submit to the Secretary of State	Apr 2008
Effective Date	May 2008

# DTSC Contact Information

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- DTSC Cyanide Regulations website:
  - [http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/Cyanide\\_Proposed.cfm](http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/Cyanide_Proposed.cfm)
- Cyanide Listserv
  - <http://www.calepa.ca.gov/listserv/dtsc>
- DTSC Cyanide Regulations staff
  - Evelia Rodriguez
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# Questions?

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